

Application Serial No. 10/656,606
Amendment dated June 9, 2006
Reply to Office Action of January 11, 2006

REMARKS

Claims 1-12 are currently pending. In the Office Action mailed January 11, 2006, the Examiner rejected claims 1-11 and objected to claim 12. Claim 1 is currently amended. Claim 12 has been cancelled. Claim 13 has been added.

A. Objection to Claim 12 under 37 C.F.R. §1.75(c)

Claim 12 was objected to under 37 C.F.R. §1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. Claim 12 has been cancelled and therefore this rejection is now moot.

B. Rejection of Claims under § 103(a)

Claims 1, 2 and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,594,463 to Sakamoto (hereinafter the "Sakamoto reference") in view of U.S. Publication No. 2004/0027057 to Sundahl (hereinafter the "Sundahl reference"). Claim 1, in its current amended form, is not obvious in light of the combination of the Sakamoto reference with the Sundahl reference. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally the prior art reference (or references when combined) must teach or suggest all the claims limitations (see MPEP § 2143). The combination of the Sakamoto reference and the Sundahl reference fails to establish a *prima facie* case of obviousness.

Claim 1, as amended, specifically requires "a current source is arranged between each individual cathode of the organic light-emitting diodes and ground." The Sakamoto reference details in FIG. 1 that the current source 10 is not positioned between each individual cathode of the electroluminescent (EL) elements 14 and the ground (GND). The current source 10 is positioned between the voltage source and the EL elements 14. Column 4, lines 34-35, state that

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the cathodes of the EL elements 14 are connected to the scanning electrode 16 with no intervening current source. Therefore, the Sakamoto reference teaches away from "a current source is arranged between each individual cathode of the organic light-emitting diodes and ground." Furthermore, the positioning of the current source is one important factor in the operation of the display apparatus discussed in the Sakamoto reference. The Sakamoto reference applies a voltage across all of the EL elements 14 simultaneously and determines the aging of the EL elements 14 by measuring the drop across the EL element 14'. Aging of the EL elements 14 is always determined by the drop across the EL element 14' since the drop across EL element 14' will always be the greatest drop due to its remoteness from the voltage source and the GND. If one of the EL elements 14 were not emitting light, the effect of the voltage drop for the unlit EL element 14 would not be taken into account. Failure to take the unlit EL element 14 voltage drop into account would alter the measured voltage drop across EL element 14'. The alteration would cause inaccurate measurements of the voltage drop across EL element 14' and therefore the aging of the EL elements 14. Accordingly, accurate measurement of the voltage drop requires illumination of all of the EL elements 14 simultaneously. Thus, the current sources 10 are positioned between the voltage source and the EL elements 14 providing a constant current source 10 for illuminating all of the EL elements 14 simultaneously.

In contrast, claim 1 requires "a current source is arranged between each individual cathode of the organic light-emitting diodes and ground." Such a structure provides the ability to sequentially drive the organic light-emitting diodes—an ability lacking in the Sakamoto reference design. Reference to FIG. 2 of the present application illustrates that current sources 214a, 214b, and 214c each have current sources that feed into an entire column of organic light emitting diodes. For example, current source 214a feeds into organic light emitting diodes 212a, 212d, and 212g. Similarly, different rows of organic light emitting diodes, such as 212a, 212b, and 212c, feed into a voltage source that can be switched on and off. The result is that different combinations of rows and columns can be sequentially driven in the organic light emitting diode display. Accordingly, positioning the current sources between the cathodes of the individual organic light emitting diodes and the ground assists the sequential driving of the organic light emitting diodes. Such a function is impossible with the Sakamoto reference design and, therefore, the Sakamoto reference clearly teaches away from the language of claim 1.

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Furthermore, currently pending claim 1 also recites the step of measuring a voltage drop across the specifically positioned current sources and using that measurement as an indicator of the light output of the organic light-emitting diodes. This step is not taught by the Sakamoto reference and indeed it is not possible with Sakamoto for the reasons discussed above.

The Sundahl reference does nothing to remedy the failure of the Sakamoto reference to teach or suggest the claimed language. The Sundahl reference was cited to teach a display device comprising organic light-emitting diodes. Therefore, claim 1 is allowable over the references of record and is not rendered obvious under § 103(a). Claims 2 and 5 both depend from independent claim 1 and therefore include all of the limitations of independent claim 1. It is therefore respectfully submitted that claims 2 and 5 are both allowable over the references of record for at least the same reasons claim 1 is allowable. Furthermore, those claimed recited unique combinations of elements not taught by the cited art.

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Sakamoto reference and the Sundahl reference and further in view of U.S. Publication No. 2004/0135749 to Kondakov (hereinafter the “Kondakov reference”). The Kondakov reference fails to remedy the failure of the Sakamoto reference and the Sundahl reference to teach or suggest the claimed language of claim 1 because it was merely cited for teaching periodically adjusting the voltage applied across the pixels of an organic light emitting diode display. Claim 3 depends from claim 1 and therefore includes all of the limitations of independent claim 1. Accordingly, claim 3 is allowable over the references of record for at least the same reasons claim 1 is allowable. Furthermore, those claimed recited unique combinations of elements not taught by the cited art.

Claims 4 and 6-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Sakamoto reference and the Sundahl reference and further in view of U.S. Publication No. 2003/0122813 to Ishizuki et al. (hereinafter the “Ishizuki reference”). The Ishizuki reference fails to remedy the failure of the Sakamoto reference and the Sundahl reference to teach or suggest the claimed language of claim 1 because it was merely cited for activating emitting elements to independently emit light in succession or keeping measured current values in memory. Claims 4 and 6-11 all depend from claim 1 and therefore include all of the limitations of claim 1. It is therefore respectfully submitted that claims 4 and 6-11 are allowable over the

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references of record for at least the reasons provided with respect to claim 1. Furthermore, those claimed recited unique combinations of elements not taught by the cited art.

C. Addition of Claim 13

Among other features, claim 13 requires "a plurality of constant current sources arranged between each individual cathode of the organic light-emitting diodes and the ground." As already discussed, none of the references of record teach or suggest at least this feature of claim 13. Accordingly, claim 13 is allowable over the references of record.

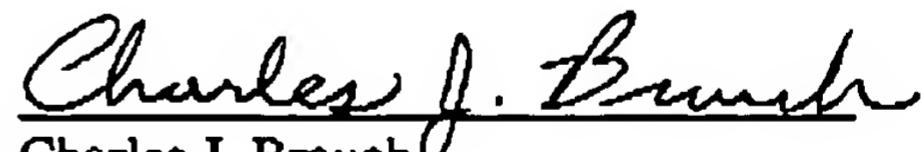
D. Conclusion

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is found that the present amendment does not place the application in a condition for allowance, applicant's undersigned attorney requests that the examiner initiate a telephone interview to expedite prosecution of the application.

Applicant encloses a credit card voucher in the amount of \$450.00 for a two-month extension of time to file a Response to the Office Action herein for a large entity. Applicant knows of no additional fees due herein with this submission. However, if any charges or credits are necessary, please apply them to Deposit Account 23-3000.

Respectfully submitted,

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